

**BP Minerals America**

1515 Mineral Square
Salt Lake City, Utah 84112
(801) 322-7000
FAX (801) 583-3129

BP MINERALS AMERICA

July 28, 1988

Mr. Lowell P. Braxton
Administrator, Mined Land Reclamation Program
Utah Division of Oil Gas and Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Mr. Braxton:

Enclosed please find the cost estimate for leach pad decommissioning for the Barneys Canyon Project. The decommissioning estimate should be inserted in Appendix H-1 of the NOI. Replacement pages for the Reclamation Cost Estimate chapter are also attached and should be appropriately inserted. Please contact Mr. Robert Bayer or Mr. Brian Buck of JBR Consultants at 943-4144 should you have questions regarding this revision. Your expeditious handling of this matter will be appreciated.

Sincerely,

A. D. Schurtz ^{RB}

G. D. Schurtz
Manager, Environmental Affairs

RECEIVED
JUL 28 1988

DIVISION OF
OIL, GAS & MINING

7.0 Reclamation Cost Estimate

Costs for implementation of the proposed reclamation plan have been prepared for each component on a unit cost basis. This method requires three inputs, quantities of materials, production rates, and equipment unit costs. Quantities were determined from the reclamation plan presented above. Production rates were calculated from procedures recommended in the Cat Performance Handbook (1987). Equipment unit costs were derived by averaging hourly rate estimates obtained from three local construction contractors.

Appendix H-1 provides spreadsheets of the reclamation components and associated costs for each area of the property receiving treatment. All assumptions, references, and ancillary calculations used in preparing these spreadsheets are found in Appendix H-2. Table 7.0.1 summarizes the costs for each component. The total cost of reclamation (in 1988 dollars) is estimated to be \$2,052,200.

Table 7.0.1 Reclamation Cost Summary

<u>Component</u>	<u>Cost</u>
Decommissioning of Leach Heaps	125,000
Topsoiling	765,700
Pit Safety Berms	3,100
Fill Slope Regrading	186,700
Rip Topsoiled Surfaces	14,600
Leach Pad Regrading	29,400
Fold Pond & Leach Pad Liners	3,500
Pond Sludge Removal	50,000

Table 7.0.1 Reclamation Cost Summary (Continued)

<u>Component</u>	<u>Cost</u>
Runoff Control	282,300
Revegetation	481,600
Equipment Mob/demob	<u>12,600</u>
Subtotal	\$1,954,500
Supervision (5% of subtotal)	<u>97,700</u>
Total	\$2,052,200

PAD DECOMMISSIONING COST ESTIMATE
BARNEYS CANYON PROJECT

Experience at other leach operations shows that the cyanide in the spent leach material naturally degrades under the influence of oxidation, pH adjustment, and gradual flushing with precipitation. The longer the aging time, the greater is the natural degradation. If at the end of the operations, we find that water draining from the abandoned heaps still does not meet the Bureau of Water Pollution Control standards we will rinse the heaps with fresh water at a natural pH of about 8 which will quickly destroy the remaining cyanide. From our design operating scenarios, we know that we can leach all areas of the heaps with this solution in less than one year with a 3-man crew of leach operators.

The estimated cost for the leach crew is \$25,000 per man per year for salary and benefits. This is based on the assumed hourly rate of \$12.50, which has been used elsewhere in this reclamation cost estimate. Total labor cost is therefore estimated to be no more than \$75,000. Electricity, replacement parts, and general maintenance is estimated to be not more than \$50,000. This cost estimate has been provided by Mine and Mill Engineering of Salt Lake City and is based on their broad experience in design of and cost estimation for cyanide heap leaching facilities throughout the Western United States. The total cost to operate the system for one year is estimated to be \$125,000.